

## 165. The Recent Brachiopod Fauna of Japan.

### (1) New Genera and Subgenera.

By Hisakatsu YABE and Katora HATAI.

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The present article is based upon the brachiopod fauna inhabiting the seas adjacent to Japan; the materials being collected by the surveying ship Sôyô-maru of the Imperial Fisheries Institute at Tokyo. During her cruises from 1926 to 1930, on the shelf-sea bordering Honsyû, Sikoku and Kyûshû, dredge operation and other oceanographical observations were prosecuted by her officers at 658 stations; the bottom samples obtained from 109 stations were found to contain brachiopods.

Among the numerous specimens of brachiopods in the collection there are discriminated 30 species in 13 genera and 1 subgenera distributed in 4 families. The total number of genera and species known from the seas around Japan together with their geographic distribution in the Western Pacific Ocean is given in the following list. The genera marked with an asterisk are those represented in the materials collected by the Sôyô-maru.

Genera known from Japan.	Total number of species.	Recent.	Japan.	Coll. by Sôyô-maru.	New to science.	N. W. America.	Philip- pine.	Java- Sumatra- Borneo.	China.	Australia.	New Zealand.	Hawaii.
1. <i>Lingula</i>	13	8	0	0	0	0	2	1	1	4	0	1
2. <i>Discinisca</i>	9	3	0	1	2	1	1	0	1	0	0	0
3. <i>Craniscus</i> *	1	1	1	0	0	1	1	0	0	0	0	0
4. <i>Hemithyris</i> *	2	2	2	1	1	0	0	0	0	0	0	0
5. <i>Neohemithyris</i> *	1	1	1	0	0	0	0	0	0	0	0	0
6. <i>Tegulorhynchia</i> *	3	1	1	0	0	0	1	1	0	1	0	0
7. <i>Terebratulina</i> *	17	9	7	2	3	4	3	1	2	0	1	1
8. <i>Surugathyris</i> *	1	1	1	1	0	0	0	0	0	0	0	0
9. <i>Freleia</i>	1	1	0	0	1	0	0	0	0	0	0	0
10. <i>Gryphus</i> *	7	2	2	0	0	2	2	0	1	0	0	0
11. <i>Cnismatocentrum</i>	1	1	0	0	1	0	0	0	0	0	0	0
12. <i>Platidia</i>	4	1	0	0	1	0	0	0	0	0	0	0
13. <i>Diestothyris</i>	3	1	0	0	1	0	0	0	0	0	0	0
14. <i>Terebratalia</i>	8	3	2	0	3	0	0	1	0	0	0	0
15. <i>Coptothyris</i>	1	1	0	0	0	0	0	0	0	0	0	0
16. <i>Jolonica</i> *	2	1	1	1	0	1	0	0	0	0	0	0
17. <i>Campages</i> *	3	1	1	0	0	2	1	1	1	0	0	0
18. <i>Japanithyris</i>	1	1	0	0	0	0	0	0	0	0	0	0
19. <i>Dallina</i> *	6	3	3	2	0	0	0	0	0	0	0	0
20. <i>Laqueus</i> *	11	8	6	4	3	0	0	0	0	0	0	0
21. <i>Pictothyris</i> *	1	1	1	0	0	0	0	0	0	0	0	0
22. <i>Nipponithyris</i> *	1	1	1	1	0	0	0	0	0	0	0	0
	97	52	30	13	16	13	9	6	8	1	2	

The bathymetric range of the 22 genera cited above is as follows (in fathoms, with the number of species in parenthesis) ;

*Lingula* (8) 0-23; *Discinisca* (3) 20; *Craniscus* (1) 43-484; *Hemithyris* (2) 3-186; *Neohemithyris* (1) 47-139; *Tegulorhynchia* (1) 194-347; *Terebratulina* (9) 20-808; *Surugathyris* (1) 362; *Freleia* (1) 21-1,059; *Gryphus* (2) 59-302; *Cnismatocentrum* (1) 60-100; *Platidia* (1) 65; *Diestothyris* (1) 10-238; *Terebratalia* (3) 7-259; *Coptothyris* (1) 7-37; *Jolonica* (1) 54; *Campages* (1) 59-700; *Japanithyris* (1) 21-59; *Dallina* (3) 45-241; *Laqueus* (8) 22-682; *Pictothyris* (1) 20-123; *Nipponithyris* (1) 51-272.

The new genera and subgenera discriminated in the materials from the seas around Honsyû, Sikoku and Kyûsyû, are as follows :

### Genus *Neohemithyris* nov.

Definition :—Shell resembling *Hemithyris* in shape, folding, beak characters, cardinalia and microstructure, differing only in possessing an entire foramen and conjunct deltidial plates in ventral valve, and no cardinal process or median ridge in the dorsal valve; test usually solid and muscular impression sunken.

Genotype :—*Rhynchonella lucida* Gould. Fig. 4 (Reg. No. 56231).<sup>1)</sup>

1862 *Rhynchonella lucida* Gould, Otia Conch., p. 120.

1886 *Rhynchonella lucida* Davidson, Trans. Linn. Soc., Ser. 2, Vol. 4, Zool., pt. 2, p. 168, pl. 24, figs. 14-15 b.

1927 (?) *Hemithyris lucida* Thomson, Brach. Morph. a. Gen. Tert. a. Rec, p. 151.

Thomson already suspected the generic separation of this species from *Hemithyris* and this view is now supported by our observation on many specimens in the Sôyô-maru collection, the distinctive features being being definite and invariable. Measurements of 4 homœotypes (in mm.) :

Length .....	11.5	11.0	13.0	14.0
Width .....	11.0	10.0	11.5	13.0
Depth .....	7.0	6.5	8.0	8.0

### Distribution :—

Sôyô-maru, Stations 59, 212, 219, 294, 428, 440 in the Pacific, 30°07'20''-39°52' N., 128°06'30''-142°13'50'' E., in 102-210 m., bottom temperature 9.1°-15.7° C.

### Genus *Terebratulina* d'Orbigny

#### Subgenus *Surugathyris* nov.

Definition :—Shell resembling *Terebratulina* in general outline and cardinalia, differing in being strongly inequivalve, possessing in the adult stage the shape of beak characteristic to the young stage of some forms of *Terebratulina*, by the anterior and lateral commissures being

1) All the specimens figured in this article are registered and stored in the Institute of Geology and Palaeontology, Tohoku Imperial University.

straight, and in retaining in the adult stage the surface sculpture of the juvenile examples of some *Terebratulina*. The surface ornament consists of radial ribs intersected by concentric lines of growth giving rise to a granular sculpture. The pedicle collar is short and strong, test punctate, punctations fine and not dense. The dorsal valve is characterized by possessing crura which are round and stem-like, two small knobs, one below each crura, and another similar one between them at the anterior edge of the short low median septum.

The above definition covers the essential specific features of the subgenotype and, as there is only a single species, it also includes the subgeneric characteristics.

Subgenotype:—*Terebratulina* (*Surugathyris*) *surugaensis* nov. Fig. 1.

A single specimen examined. Measurements (in mm.): Length ca. 16.5, breadth 13.5, depth 5.

Type locality:—35°00'40'' N., 138°34'00'' E., in 604 m., muddy sand, bottom temperature 6.0° C., Nov. 17, 1927 (Sôyô-maru, Station 262). Reg. No. 56227.

#### Genus *Nipponithyris* nov.

Definition:—Shell resembling *Magadina* in general shape and folding, differing in possessing a more arcuate anterior margin, broader anterior sulcation or folding, feeble muscular impressions; median septum high, highest at point of union with transverse band, thereon steeply descending anteriorly where it becomes a mere thread, supporting the cardinalia; dental sockets deep; crura attached to inner corner of socket-ridges; cardinal process small, projecting from the umbo like a small shelf, subcircular in outline and transversely striate; inner hinge-plate excavate, incised medially with a longitudinal groove; crura stems short and slender; descending branches united to septum by a narrow transverse band, ascending branches with a broad ribbon extending from the transverse processes to the end of the descending branches, giving to the loop a transversely-ovate shaped ring, a little wider anteriorly than posteriorly.

Genotype:—*Nipponithyris nipponensis* nov. Figs. 2, 3.

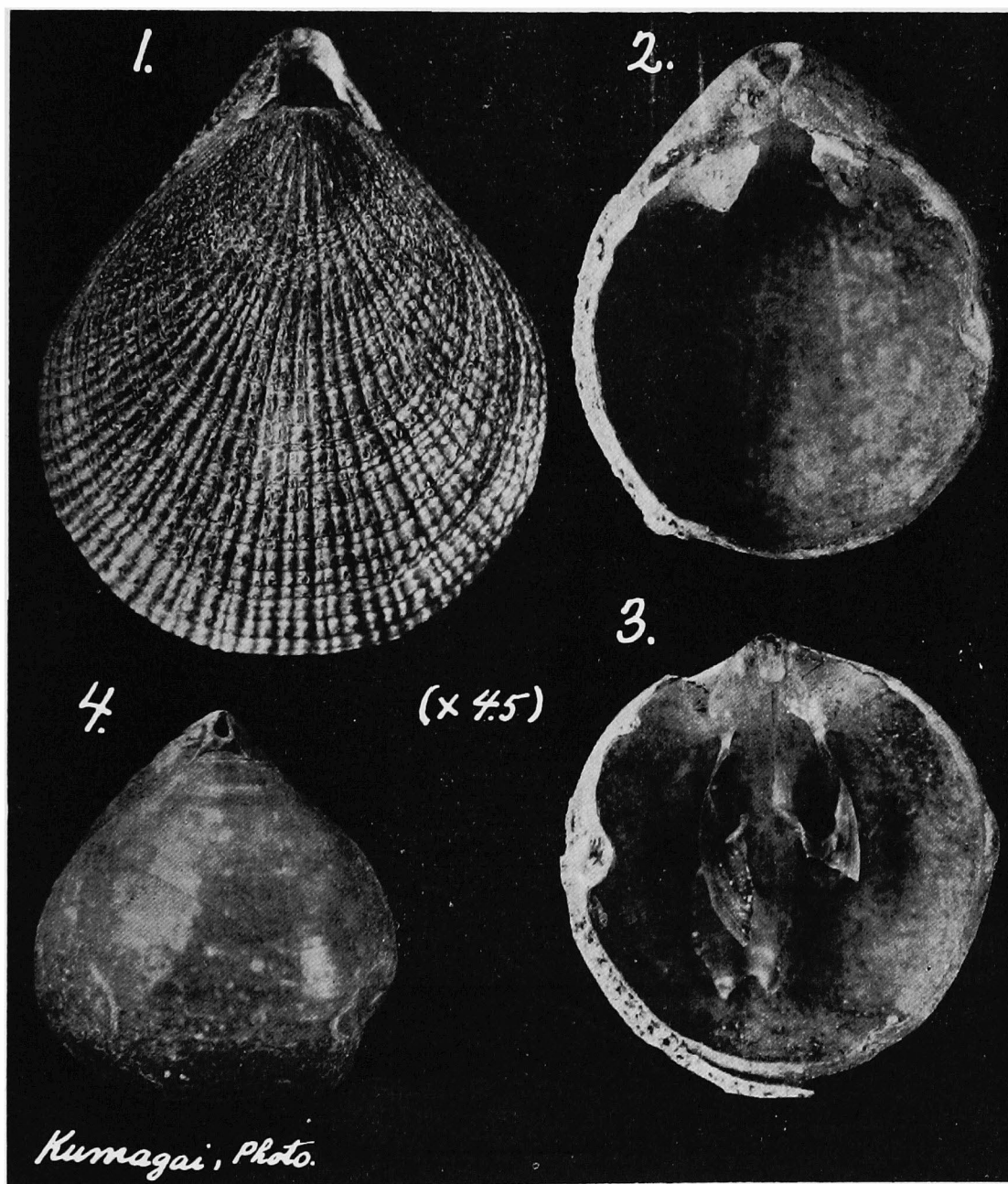
Measurements (in mm.);

					(holotype)
Length of shell ...	15.0	12.5	11.0	18.0	12.5
Width of shell ...	12.0	10.5	9.5	16.0	11.0
Depth of shell ...	8.0	6.0	6.0	10.0	7.0

Distribution ;

Sôyô-maru, Stations 412, 418, 425 along the west coast of Kyûsyû, and 475, 478, 521, 541, 593, 599, 600, 601, 602, 649, 653 in the Japan Sea, 31°10'30''–41°39'15'' N., 129°13'–140°39'45'' E., in 86–454 m., bottom temperature 1.3°–20.8° C.

These new genera and subgenera represent two different faunal affinities and to opposite regions, namely, *Neohemithyris* shows its closest affinity to the northern form, *Hemithyris*, and *Nipponithyris* to certain forms of the Australian region; *Surugathyris* is yet in question in this respect.<sup>1)</sup>



1) At this place the writers wish to offer their warmest thanks to Mr. Marukawa of the Imperial Fisheries Institute at Tokyo, for forwarding the rich collection of recent brachiopoda to our study.